ABSTRACT OF THE DISCLOSURE

A system and method for conveying flowable material through a conduit that creates a strong laminar flow of the material surrounded by a boundary layer flow of the same or a different flowable material, such that long transport distances through dramatic elevation and directional changes can be achieved. Some embodiments of the system include a blower assembly, an inlet conduit, an outlet conduit and a mixing chamber, wherein the mixing chamber includes an outer barrel, an inner barrel and an accelerating chamber. Low pressure air is supplied to the system by the blower assembly and mixed with particulate material. The air/material mixture is transported through the mixing chamber into the accelerating chamber and through the outlet conduit. In other embodiments, the particulate material is mixed with the air in the accelerating chamber. Other embodiments of the system include only the mixing chamber, where a flow of at least one flowable material in the form of high or low pressure gas, liquid, and/or particulates suspended within the gas or liquid enters either laterally or axially, forms boundary layer and laminar flows, and exits through the accelerating chamber.

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